

49941 (0868)



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/693,044	10/20/2000	Yoshihiro Okada	49941(868)	8505

7590 01/09/2003
David G. Conlin
Edwards & Angell
P.O. Box 9169
Boston, MA 02209



EXAMINER	
PIZIALI, JEFFREY J	
ART UNIT	PAPER NUMBER
2673	

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JAN 13 2003
MAILED: 01/09/2003

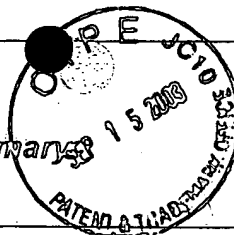
Please find below and/or attached an Office communication concerning this application or proceeding.

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SEP 17 2003

Technology Center 2600

Office Action Summary



Application No.

09/693,044

COPY

Applicant(s)

OKADA ET AL

Examiner

Jeff Piziali

Art Unit

2673

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 3,6,9 and 14-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,7,8,10-13 and 19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

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Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 October 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Invention Group I, Species I (claims 1, 2, 4, 5, 7, 8, 10-13, and 19) in Paper No. 4 (filed September 26, 2002) is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 3, 6, 9, and 14-18 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention and species, there being no allowable generic or linking claim. Election was made without traverse in Paper No. 4 (filed September 26, 2002).
3. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Drawings

4. Figures 10A and 10B should each be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or

capacitance lines so that a predetermined potential difference from a voltage applied to the counter electrode is always maintained when any of the pixel electrodes and supplementary capacitance lines leaks (see Column 6, Line 21 - Column 8, Line 50).

Regarding claim 4, Takeda discloses the supplementary capacitance lines [Fig. 4, 17] are separated every scanning electrode line [Fig. 4, 15] to which the switching element for switching driving a pixel potential difference connected through the supplementary capacitance is connected at the intersection, and the supplementary capacitance drive circuit [Fig. 4, 13] drives the supplementary capacitance lines with a polarity being reversed every time an on-signal is input to the scanning electrode line driven at a stage preceding the scanning electrode line (see Fig. 5c; Column 8, Line 55 - Column 9, Line 40).

Regarding claim 7, Takeda discloses the switching element and the pixel electrode are disconnected from each other at a pixel where the leakage between the pixel electrode and the supplementary capacitance line occurs (see Figs. 2 & 5; Column 9, Line 1 - Column 10, Line 12).

Regarding claim 10, this claim is rejected by the reasoning applied in the above rejection of claim 7.

Regarding claim 19, this claim is rejected by the reasoning applied in the above rejection of claim 1.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2, 5, 8, and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda et al. (US 5,398,043).

Regarding claim 2, Takeda discloses a display mode of the LCD apparatus is normally black (see Fig. 3; Column 9, Lines 41-58) and the supplementary capacitance drive circuit drives the supplementary capacitance so that a potential difference not less than a threshold voltage of the liquid crystal is maintained with respect to the counter electrode (see Column 8, Lines 12-34). Takeda does not expressly disclose a display mode of the LCD apparatus being normally white. However, normally-white LCDs were well known and commonly understood at the time of invention. Therefore, it would have been obvious to one skilled in the art at the time of invention to use a normally-white type liquid crystal apparatus as Takeda's LCD, so as to provide energy savings for a image display device that will oftentimes reside in a mainly white state.

Regarding claim 5, this claim is rejected by the reasoning applied in the above rejection of claim 4.

Regarding claim 8, this claim is rejected by the reasoning applied in the above rejection of claim 7.

Regarding claim 11, this claim is rejected by the reasoning applied in the above rejection of claims 1 and 2.

Regarding claim 12, this claim is rejected by the reasoning applied in the above rejection of claim 4.

Regarding claim 13, this claim is rejected by the reasoning applied in the above rejection of claim 7.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Suzuki et al. (US 4,621,260), Howard et al. (US 4,845,482), Tsukada et al. (US 4,955,697), Moon (US 5,793,346), Itoh et al. (US 5,844,535), Moon et al. (US 5,945,970), Yoon (US 6,005,542), Mikami et al. (US 6,115,017), Yoneya et al. (US 6,300,926), Aoki (US 6,307,532), and Mori et al. (US 6,344,885) are cited to further evidence the state of the art pertaining to active-matrix liquid crystal displays.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Piziali whose telephone number is (703) 305-8382. The examiner can normally be reached on Monday - Friday (6:30AM - 3PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (703) 305-4938. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

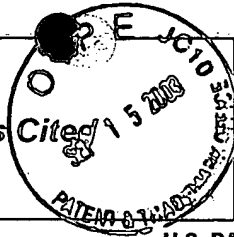

J.P.

October 16, 2002



BIPIN SHALWALA
SUPERVISOR PATENT EXAMINER
TECHNOLOGY CENTER 2600

Notice of References Cited



Application/Control No.

09/693,044

Applicant(s)/Patent Under

Reexamination

OKADA ET AL

Examiner

Jeff Piziali

Art Unit

2673

Page 1 of 1

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U.S. PATENT DOCUMENTS

* Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
A US-4,621,260	11-1986	Suzuki et al.	345/92
B US-4,845,482	07-1989	Howard et al.	345/58
C US-4,955,697	09-1990	Tsukada et al.	349/38
D US-5,398,043	03-1995	Takeda et al.	345/94
E US-5,793,346	08-1998	Moon, Seung-Hwan	345/92
F US-5,844,535	12-1998	Itoh et al.	345/92
G US-5,945,970	08-1999	Moon et al.	345/92
H US-6,005,542	12-1999	Yoon, Sang Young	345/92
I US-6,115,017	09-2000	Mikami et al.	345/92
J US-6,300,926	10-2001	Yoneya et al.	345/87
K US-6,307,532	10-2001	Aoki, Toru	345/94
L US-6,344,885	02-2002	Mori et al.	349/44
M US-			

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FOREIGN PATENT DOCUMENTS

* Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
N				
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P				
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R				
S				
T				

NON-PATENT DOCUMENTS

* Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
U				
V				
W				
X				

A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).) Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

DEC/19/01 49941(70868)



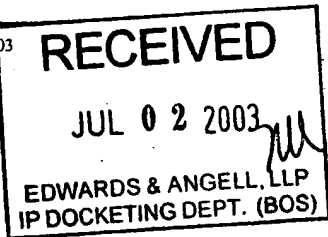
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/693,044	10/20/2000	Yoshihiro Okada	49941(868)	8505

21874 7590 06/30/2003
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EXAMINER

PIZIALI, JEFFREY J

ART UNIT PAPER NUMBER

2673

DATE MAILED: 06/30/2003

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Technology Center 2600

Office Action Summary

Application No.

09/693,044

Applicant(s)

OKADA ET AL.

Examiner

Jeff Piziali

Art Unit

2673

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 3, 6, 9 and 14-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, 5, 7, 8, 10-13, 19 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

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Application Papers

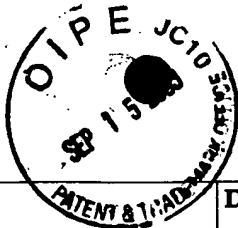
- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 16 April 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) Z.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:



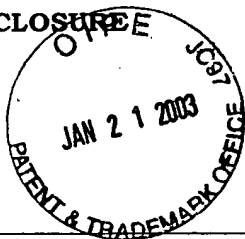
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PATENT TRADEMARK OFFICE

FORM PTO-1449

INFORMATION DISCLOSURE
STATEMENT

DOCKET NO.:

70868/49941

SERIAL NO.:

09/693,044

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APPLICANT(S):

Y. OKADA, et al.

SEP 17 2003

Technology Center 2600

FILING DATE:

May 25, 2001

GROUP NO.:

2815 2673

UNITED STATES PATENT DOCUMENTS

EXAM. INITIALS		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE IF APPROPRIATE
	AA						

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JAN 24 2003

Technology Center 2600

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION YES/NO
OP	BA	JP-A-9-54299	1997-02-25	JAPAN	—	—	Abstract

OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)

OP	CA	A copy of the Office Action (dated December 9, 2002) that was issued in connection with corresponding Korean Patent Application No. 2000-61924.					

EXAMINER:

Jeff Piziali

DATE:

6/25/03

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Invention Group I, Species I (claims 1, 2, 4, 5, 7, 8, 10-13, and 19) in Paper No. 4 (filed September 26, 2002) is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 3, 6, 9, and 14-18 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention and species, there being no allowable generic or linking claim. Election was made without traverse in Paper No. 4 (filed September 26, 2002).
3. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Drawings

4. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on April 16, 2003 have been approved. A proper drawing correction or corrected drawings are

required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

5. The Patent and Trademark Office no longer makes drawing changes. See 1017 O.G. 4.

It is applicant's responsibility to ensure that the drawings are corrected. Corrections must be made in accordance with the instructions below.

INFORMATION ON HOW TO EFFECT DRAWING CHANGES

1. Correction of Informalities -- 37 CFR 1.85

New corrected drawings must be filed with the changes incorporated therein. Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and centered within the top margin. If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings **MUST** be filed within the **THREE MONTH** shortened statutory period set for reply in the "Notice of Allowability."

Extensions of time may **NOT** be obtained under the provisions of 37 CFR 1.136 for filing the corrected drawings after the mailing of a Notice of Allowability. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

2. Corrections other than Informalities Noted by Draftsperson on form PTO-948.

All changes to the drawings, other than informalities noted by the Draftsperson, **MUST** be made in the same manner as above except that, normally, a highlighted (preferably red ink) sketch of the changes to be incorporated into the new drawings **MUST** be approved by the examiner before the application will be allowed. No changes will be permitted to be made, other than correction of informalities, unless the examiner has approved the proposed changes.

Timing of Corrections

Applicant is required to submit acceptable corrected drawings within the time period set in the Office action. See 37 CFR 1.185(a). Failure to take corrective action within the set (or extended) period will result in **ABANDONMENT** of the application.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claim 20 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Newly added independent claim 20 recites the hitherto unseen limitation of "the voltage applied to the counter electrode is applied to the supplementary capacitance drive circuit" (see Page 3 of the Amendment filed April 16, 2003, i.e. Paper No. 9). However, the present specification discloses, "the supplementary capacitance lines 23 are driven by a supplementary capacitance drive circuit 27 *independently* of the common signal lines 26" (see Page 24, First Paragraph). This teaching in the specification is at odds with the language found in claim 20.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 4, 7, 10, 19, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Takeda et al. (US 5,398,043).

Regarding claim 1, Takeda discloses an active-matrix liquid crystal display apparatus comprising: an active-matrix substrate including a plurality of scanning electrode lines [Fig. 1, 1], a plurality of data electrode lines [Fig. 1, 2], pixel electrodes [Fig. 1, A] and switching elements [Fig. 1, 3], the pixel electrodes being respectively connected to intersections of the plurality of scanning electrode lines and the plurality of data electrode lines via the switching elements; a counter electrode substrate including a counter electrode formed thereon, the counter electrode being opposed to the pixel electrodes; a liquid crystal [Fig. 1, 7] sandwiched between the active matrix substrate and the counter electrode substrate; the active-matrix substrate further including supplementary capacitance lines which are formed in parallel to the scanning electrode lines, and supplementary capacitances [Fig. 1, 8] for holding display data which are connected between the pixel electrodes and the supplementary capacitance lines, the apparatus further comprising: a supplementary capacitance drive circuit [Fig. 1, Ve] for driving the supplementary capacitance lines so that a predetermined potential difference from a voltage applied to the counter electrode is always maintained when any of the pixel electrodes and supplementary capacitance lines leaks (see Column 6, Line 21 - Column 8, Line 50).

Regarding claim 4, Takeda discloses the supplementary capacitance lines [Fig. 4, 17] are separated every scanning electrode line [Fig. 4, 15] to which the switching element for switching driving a pixel potential difference connected through the supplementary capacitance is connected at the intersection, and the supplementary capacitance drive circuit [Fig. 4, 13] drives the supplementary capacitance lines with a polarity being reversed every time an on-signal is

input to the scanning electrode line driven at a stage preceding the scanning electrode line (see Fig. 5c; Column 8, Line 55 - Column 9, Line 40).

Regarding claim 7, Takeda discloses the switching element and the pixel electrode are disconnected from each other at a pixel where the leakage between the pixel electrode and the supplementary capacitance line occurs (see Figs. 2 & 5; Column 9, Line 1 - Column 10, Line 12).

Regarding claim 10, this claim is rejected by the reasoning applied in the above rejection of claim 7.

Regarding claim 19, this claim is rejected by the reasoning applied in the above rejection of claim 1.

Regarding claim 20, this claim is rejected by the reasoning applied in the above rejection of claim 1; furthermore, Takeda discloses the voltage [Fig. 1, V_s] applied to the counter electrode [Fig. 1, 7] is applied to the supplementary capacitance drive circuit [Fig. 1, 8] (see Column 6, Line 21 - Column 8, Line 50).

10. Claim 20 is further rejected under 35 U.S.C. 102(b) as being anticipated by Applicants' own admitted prior art.

Art Unit: 2673

Regarding claim 20, Applicants' own admitted prior art discloses an active-matrix liquid crystal display apparatus [Fig. 7, 1] comprising: an active-matrix substrate [Fig. 7, 2] including a plurality of scanning electrode lines [Fig. 8, 11], a plurality of data electrode lines [Fig. 8, 12], pixel electrodes [Fig. 8, 14] and switching elements [Fig. 8, 10], the pixel electrodes being respectively connected to intersections of the plurality of scanning electrode lines and the plurality of data electrode lines via the switching elements; a counter electrode substrate [Fig. 7, 3] including a counter electrode [Fig. 8, 16] formed thereon, the counter electrode being opposed to the pixel electrodes; a liquid crystal [Fig. 8, C_{LC}] sandwiched between the active matrix substrate and the counter electrode substrate; the active-matrix substrate further including supplementary capacitance lines [Fig. 8, 15] which are formed in parallel to the scanning electrode lines, and supplementary capacitances [Fig. 8, C_s] for holding display data which are connected between the pixel electrodes and the supplementary capacitance lines, the apparatus further comprising: a supplementary capacitance drive circuit [Fig. 8, C_s] for driving the supplementary capacitance lines so that a predetermined potential difference from a voltage applied to the counter electrode is always maintained when any of the pixel electrodes and supplementary capacitance lines leaks, wherein the voltage applied to the counter electrode is applied to the supplementary capacitance drive circuit (see Figs. 7-9 and Pages 1-6).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 2, 5, 8, and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda et al. (US 5,398,043).

Regarding claim 2, Takeda discloses a display mode of the LCD apparatus is normally black (see Fig. 3; Column 9, Lines 41-58) and the supplementary capacitance drive circuit drives the supplementary capacitance so that a potential difference not less than a threshold voltage of the liquid crystal is maintained with respect to the counter electrode (see Column 8, Lines 12-34). Takeda does not expressly disclose a display mode of the LCD apparatus being normally white. However, normally-white LCDs were well known and commonly understood at the time of invention. Therefore, it would have been obvious to one skilled in the art at the time of invention to use a normally-white type liquid crystal apparatus as Takeda's LCD, so as to provide energy savings for a image display device that will oftentimes reside in a mainly white state.

Regarding claim 5, this claim is rejected by the reasoning applied in the above rejection of claim 4.

Regarding claim 8, this claim is rejected by the reasoning applied in the above rejection of claim 7.

Regarding claim 11, this claim is rejected by the reasoning applied in the above rejection of claims 1 and 2.

Regarding claim 12, this claim is rejected by the reasoning applied in the above rejection of claim 4.

Regarding claim 13, this claim is rejected by the reasoning applied in the above rejection of claim 7.

Response to Arguments

13. Applicants' arguments filed April 16, 2003 have been fully considered but they are not persuasive. Applicants contend the cited prior art of Takeda et al. (US 5,398,043) fails to disclose maintaining a predetermined potential difference between supplementary capacitance lines and common signals lines. However, the examiner respectfully disagrees. Takeda explicitly teaches supplementary capacitance drive circuitry [Fig. 1, Cs] that maintains a predetermined potential difference between [Fig. 1, A] supplementary capacitance lines [Fig. 1, Ve] and common signals lines [Fig. 1, Vt] (see Fig. 2 and Column 6, Line 21 - Column 8, Line 50). By such reasoning, rejection of the claims is deemed proper and thereby maintained.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Piziali whose telephone number is (703) 305-8382. The examiner can normally be reached on Monday - Friday (6:30AM - 3PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (703) 305-4938. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.



J.P.
June 26, 2003



Amare Mengistu
Primary Examiner